

NAVY PROGRAMS

E-2C Advanced Hawkeye

There are currently two E-2C configurations in the Hawkeye procurement program- the Hawkeye 2000 and the Advanced Hawkeye (AHE) which includes a Radar Modernization Program (RMP).

Hawkeye 2000 is an umbrella term for multiple improvements to the Group II E-2C. The key objective of this series of modifications is the integration of Cooperative Engagement Capability (CEC). The integration of CEC into the E-2C will increase the air and surface surveillance, detection, and airborne object tracking capabilities of the battlegroup and land-based CEC-capable Joint systems such as the Marine's AN/TPS-59. The improvements include the replacement of the current mission computer with a commercial-off-the-shelf (COTS) computer (Mission Computer Upgrade (MCU)) and replacement of the control and display consoles with COTS workstations (Advanced Control Indicator Set); the integration of the airborne variant of the CEC system; an upgraded cooling system, UHF Satellite Communications (SATCOM); replacement of the current Passive Detection System with an Electronic Support Measures (ESM) system; and development of a Mission Information Transfer System. To carry and employ CEC, the E-2C requires increased mission computing and display capabilities, as well as an offset in weight and volume. The modifications will be incorporated into new E-2C aircraft production. The Navy plans to retrofit these improvements into older E-2C aircraft. An upgraded inertial navigation system has also been added.

The Navy is starting the AHE/RMP for the E-2C. This program will replace the E-2C's radar with an UHF-Active Electronically Scanned Array radar. This radar is intended to provide significantly increased detection performance over the current radar, particularly in overland and littoral operations. The AHE program also includes a number of other modifications including integration of a modular communications system and glass cockpit. AHE/RMP might also include a new mission computer and new operator workstations.

TEST & EVALUATION ACTIVITIES

Hawkeye 2000 testing will be completed incrementally as the various modification components become available for testing. The MCU Operational Evaluation (OPEVAL) was conducted from November 2000 to April 2001. CEC E-2C OPEVAL is scheduled for 4QFY03 during aircraft carrier workups. During the CEC testing, both SATCOM and ESM developmental and operational testing will occur. The AHE/RMP has begun test flights using the radar technology demonstration system developed for Mountain Top installed on a C-130. AHE/RMP test planning has included formation of a Test and Evaluation Working Integrated Product Team and development of a draft Test and Evaluation Master Plan (TEMP). DOT&E will draft an Independent Evaluation Plan for RMP.

Due to its importance to fleet air operations, the survivability of the E-2C will be evaluated for expected combat missions. The Navy has developed a comprehensive survivability evaluation plan to ensure the needed data and information is available. The E-2C upgrades were reviewed and are not covered product improvement programs requiring Live Fire Test and Evaluation. This determination was based on multiple factors, including the intended role and missions of the aircraft, combat experience to date, and concept of operations.



The Advanced Hawkeye/Radar Modernization program will replace the E-2C's radar with an UHF-Active Electronically Scanned Array radar to provide significantly increased detection performance over the current radar, particularly in overland and littoral operations.

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TEST & EVALUATION ASSESSMENT

During FY01, operational testing on the MCU, a major component of the Hawkeye 2000 configuration, was completed. There was no E-2C operational testing in FY02, but some CEC E-2C developmental testing occurred.

A Beyond Low-Rate Initial Production Report was not required for the MCU OPEVAL. The Navy Operational Test Agency, Commander, Operational Test and Evaluation Force (COMOPTEVFOR) rated the MCU integration as operationally effective but not operationally suitable. DOT&E concurred with the findings. Of the five Effectiveness Critical Operational Issues (COIs) evaluated, four were found satisfactory: Tracking, Survivability, Tactics, and System Management. COMOPTEVFOR found the Joint Interoperability COI to be partially resolved. Of the 11 Suitability COIs, COMOPTEVFOR evaluated six as satisfactory: Reliability, Maintainability, Availability, Compatibility, Human Factors, and Safety. COMOPTEVFOR evaluated Logistic Supportability, Training, Documentation, and Built-In-Test (BIT) Performance as unsatisfactory. COMOPTEVFOR also found Interoperability problems to be partially resolved.

DOT&E did not concur with all of COMOPTEVFOR's evaluation of the COIs. DOT&E found the COIs of Joint interoperability unresolved instead of partially resolved since there was no test event in which the MCU-equipped E-2C demonstrated that it could effectively interface and operate with corresponding systems or units of other U.S. forces in the execution of its intended operational mission.

Per MCU TEMP approval memo, signed July 27, 2000, the TEMP would be updated within 90 days to define MCU Follow-on Test and Evaluation (FOT&E), which will include ESM and SATCOM. In July 2002, DOT&E informally received a draft of the MCU TEMP, which includes the FOT&E, ESM, and SATCOM testing. This TEMP has yet to be formally submitted to DOT&E.

A critical aspect of E-2C RMP operational testing will be Joint Interoperability, an area that was unresolved in the MCU OPEVAL. The Joint Air and Missile Defense Organization is coordinating significant resource investment by OSD in a 2010 theater air and missile defense architecture. In addition to RMP, this effort includes other upgrades, such as the Block 40/45 upgrade to the E-3, and new platforms, such as Army's Joint Land Attack Cruise Missile Defense Elevated Netted Sensor system. Additionally, the Single Integrated Air Picture System Engineering Task Force is coordinating an effort to improve the quality of the air picture available to the Joint Forces Air Component Commander and to his forces conducting and fighting the air battle through improvements in the available data links. Joint interoperability will be key to OSD achieving its theater air and missile defense goals. Therefore, testing the joint interoperability of the participating platforms will be a critical part of their Operational Test and Evaluation.